Supplementary "Control function" for Reliable Disconnect across the Bus reset

Takashi Isoda

Canon Inc.

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To resume from Bus reset (or other similar situations)...

Initiator assigns a "signature" to each ORB to be uniquely identified within the queue. ("signature" is a new definition that replaces "sequence_number".)

Target needs to maintain the "history log" of ORB execution to avoid duplicated execution of the same operation request (identified by "signature").

The "history log" of ORB execution is…

▲ created before Target stores the Status Block for the ORB.

▲ discarded after target knows that the ORB will never be re-queued by the initiator.

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How does target know the ORB will never be re-queued by the initiator?

▲ By receiving the response subaction for Status Block write request.

▲ Or by finding new "signature" in case that the response subaction for Status Block write request is missed.

▲ (Or logged out)

# *The "history log" and its lifetime..*

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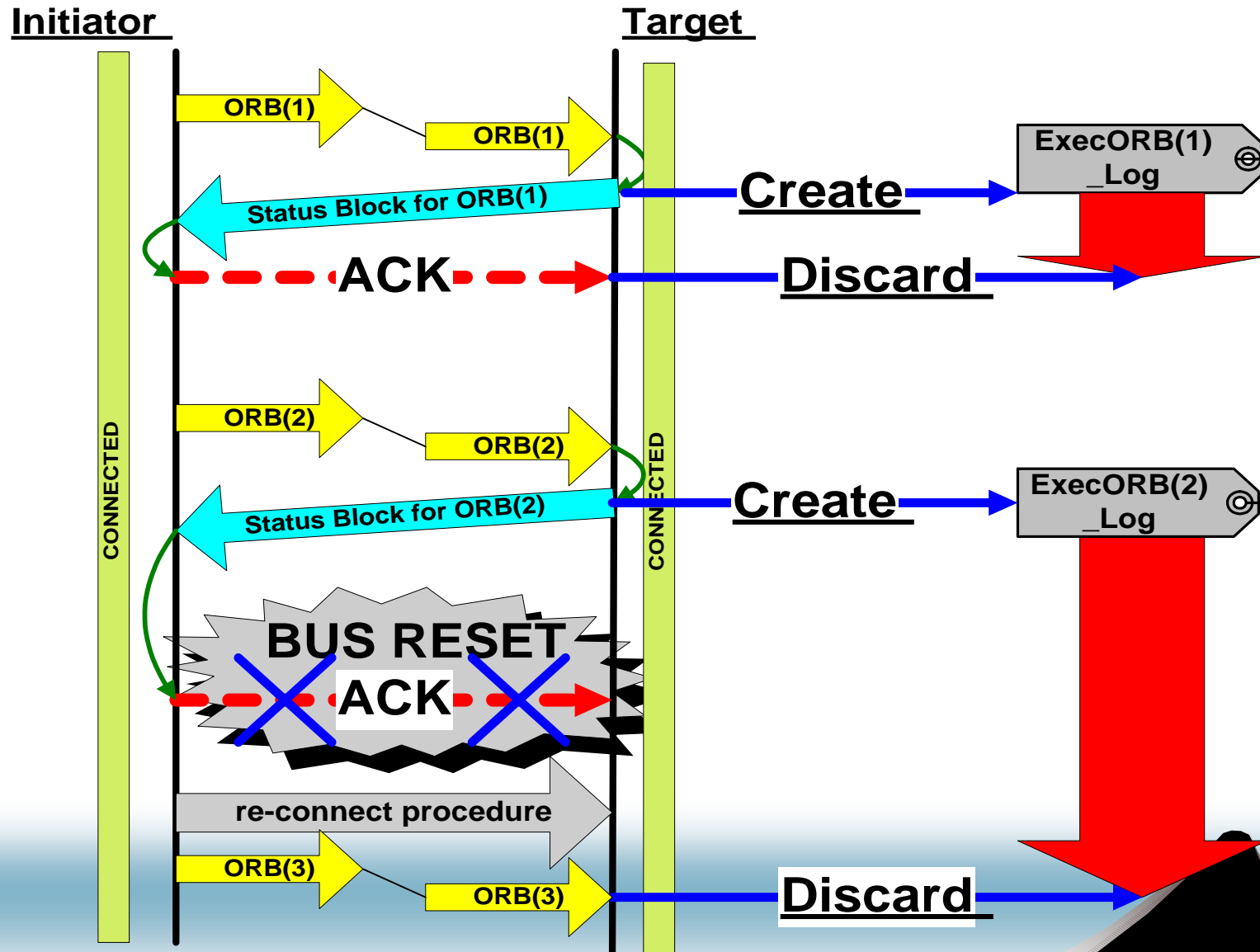
"Disconnect" needs to be improved to tolerate bus reset.

▲ Disconnection of a queue implies the existence of last (final) ORB for the queue.(i.e., There will be an ORB that no succeeding ORB for the queue exists.)

Problem

▲ In case that the response subaction for the "last" status block write request is missed, target can not know that the ORB will never be re-queued by the initiator because the target receives neither response subaction nor new signature .

- ->Target still maintains the "history log" though Initiator will never re-queue the ORB
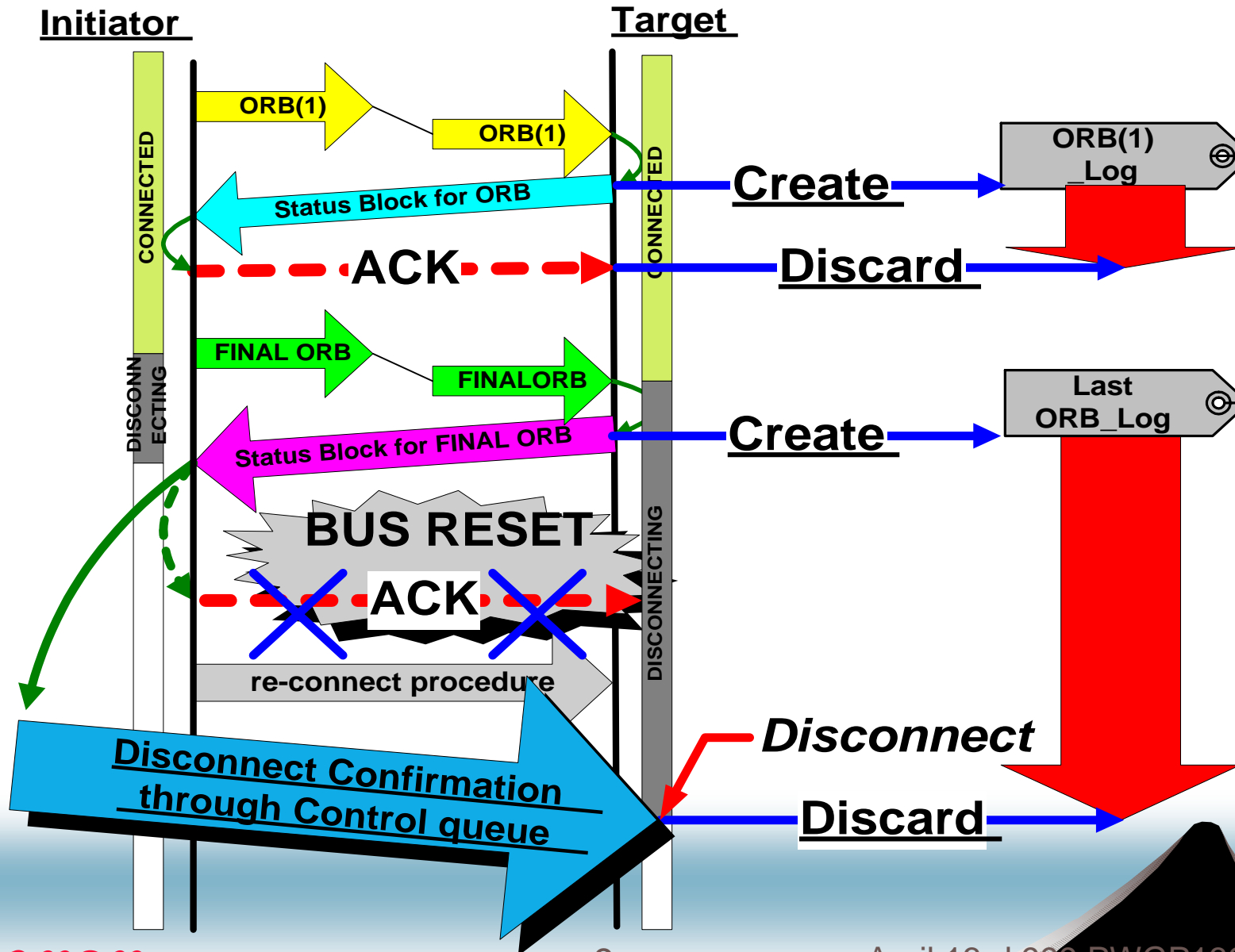
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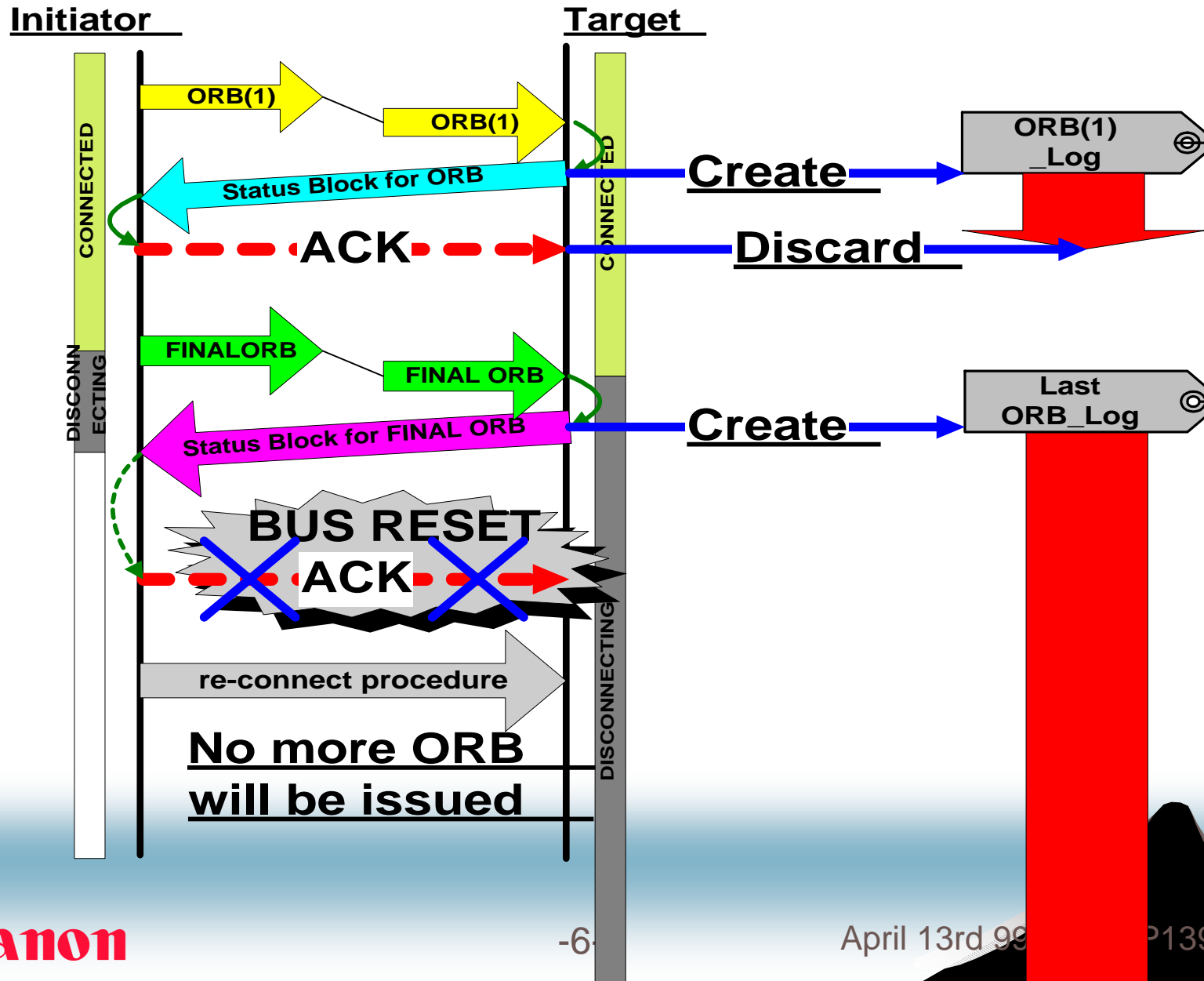
The problem

To solve the problem..

▲ Initiator informs target that Initiator will never re-queue the Final ORB by an "explicit" way (should tolerate the Bus reset) .

- **Initiator can informs target of it through the "Control queue" that has been already defined.**

- Note: The information can not be passed through "the disconnecting queue"

▲ Proposal

Define **"Disconnect confirmation"**

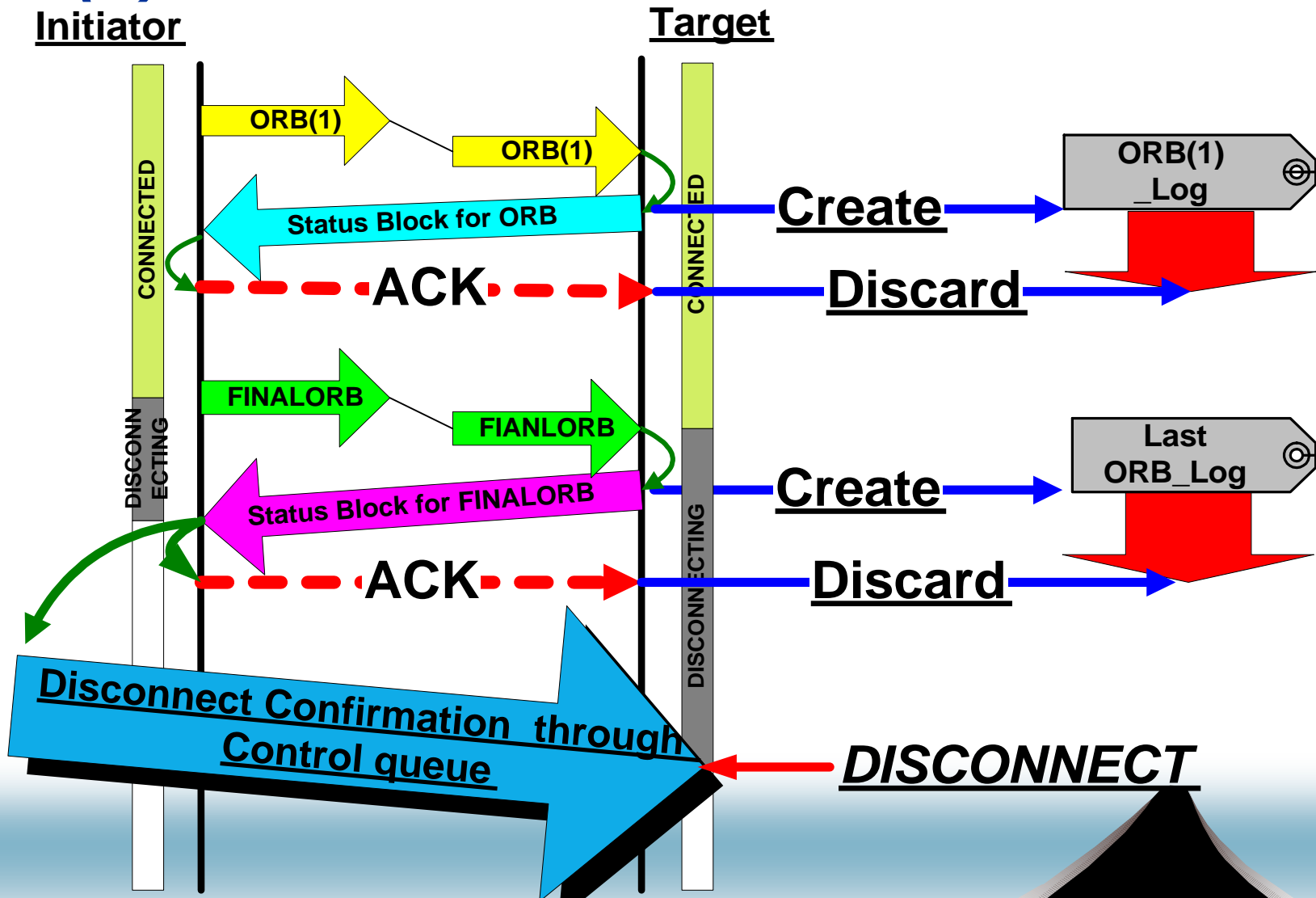as one of control functions to solve the problem

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"Disconnect Confirmation" ...

▲ One of the "Control information"s *with one or two parameters specifying confirming queue Id(s)*

▲ Initiator issues this "Control information" after confirming final ORB is completed

- Note: target does not issue this control information

▲ Receiving this "Control information", *Target may re-use the queue Id(s) specified by the parameter(s).*

▲ *Target ignores this* "Control information" when the specified queue(s) is not in disconnecting state.

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How the disconnect confirmation works.

Initiator
Target

CONNECTED
CONNECTED

ORB(1)
ORB(1)

Status Block for ORB

Create → ORB(1)_Log

ACK

Discard

FINAL ORB
FINALORB

DISCONN ECTING

Status Block for FINAL ORB

Create → Last ORB_Log

BUS RESET

ACK

re-connect procedure

DISCONNECTING

Disconnect Confirmation through Control queue

Disconnect

Discard

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How the disconnect confirmation works(2)..

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Conclusion...

▲ Some complementary mechanism will be required to complete the disconnection of a queue reliably across the Bus reset

▲ "Disconnect confirmation" will solve the problem.

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